



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE POSITION OF THE BODY IN ABORIGINAL INTERMENTS IN WESTERN MASSACHUSETTS

BY HARRIS HAWTHORNE WILDER AND RALPH WHEATON WHIPPLE

SOME eleven years ago the senior author published in this periodical an account of excavations in an aboriginal cemetery in North Hadley, Massachusetts, with some details concerning the method of interment of two skeletons found there.¹ At that time the examination was made by simply uncovering the bones, and photographing them as they lay in the damp sand, noting at the time the points of the compass, and the general relations of the body. As the bones were removed separately the same day, the time allowed for study of the position was short, and the observations were made under field conditions, which are never ideal for careful work.

Since then the incompleteness of this record has become more and more apparent, and the idea has gradually developed of finding a typical aboriginal grave, boxing it up in the field, and removing it entire to the laboratory, where, under ideal conditions, the actual excavation could take place. Under such circumstances the bones could be carefully uncovered without the slightest disarrangement, and the whole interment be fixed in place through impregnation with some cementing fluid, like glue or shellac.

Although this plan was conceived in the rough soon after the excavation of 1905, its execution was delayed until the fall of 1915, when opportunity again presented itself for continuing excavation at the same site. For this the two authors, representing respectively the neighboring colleges of Smith and Amherst, associated themselves, and in the work, which has continued since this time and is still being prosecuted, the method of removing entire graves,

¹ *American Anthropologist*, (N. S.), vol. 7 (1905), pp. 295-300, with plate XXIII and a map of the site.

with the objects in place, rather indefinite at first, has become so far developed by the aid of improvements that have constantly suggested themselves, as to form a special archaeological technique, which renders plain and simple certain relationships hitherto extremely difficult to study, and impossible to record permanently. For example, one may study the various mechanical causes of the displacement of the bones, differentiating the natural results of decay, with the dropping and sagging of the parts, and the complications due to the retentive force of the ligaments, from such external forces as frost, the action of earthworms, and the displacement caused by the larger burrowing animals. This being possible, the position of the body at burial, even to certain exact details, may be estimated, and such external conditions as the confinement of the limbs, or the folding up of an already stiffened body by the use of force, be satisfactorily made out.

Aside from all this, which forms almost a distinct line of study, the simple problem of getting out the bones with the least damage is solved most satisfactorily by this method, and many a crumbling fragment of bone, or even a mass of earth which retains the shape of a bone or bone detail, hopelessly lost when working in the field, may be saved when at a laboratory table where cements, glues, and similar substances are always at hand.

It would seem, too, that this method of removing an entire grave would be of advantage in the study of neolithic graves elsewhere, especially where there are associated objects, the exact relationship of which to the body might be important. Graves of neolithic or bronze age peoples appear in many European museums, the bones and artifacts taken from the earth with care, and re-assembled in a glass case as accurately as possible by the aid of photographs, drawings, and field notes. Of how much greater value would these be if it could be confidently stated that every piece had remained in its position as found at the time of excavation, without the slightest dislocation.

The present paper deals with the excavation of two aboriginal graves, dealt with in this way, and now placed in the museums of the two colleges in question; putting special emphasis on the position

of the body in local interments, but incidentally illustrating the method of excavating above referred to.

The first of these was found near the Connecticut river, at North Hadley, at the site of the excavations of 1905, but farther out, upon the oval knoll shown in the map of the previous paper¹ there designated as a house-site or village. This was the traditional site of the Nonotuck chief, Quonquont, whose name appeared on several of the deeds for the meadow land, sold to that shrewd English trader from Springfield, John Pynchon. Quonquont was dead by October, 1672, but a deed of that date mentions his widow, Sarah Quonquont; a son, Pocumohouse, and a daughter, Majessit, together with two others, one being a squaw. These seem to have lived at the time at this site, and undoubtedly the village had numerous inhabitants until the defeat of Phillip in 1676 caused the abandonment of the English lands by all Indians who, like these Nonotuck, had taken part in the great confederation.

This combined site, the knoll, the field, and the neck of land connecting the two, has long been known to contain Indian skeletons, and on a number of occasions several at a time have been excavated, in excellent condition. Here the authors dug, during several days in the autumn of 1915, running about four hundred feet of exploratory trenches, and on the afternoon of November 26, a fragment of the outer condyle of a left tibia was thrown up by the shovel.

This led to the location of what proved later to be a complete male skeleton, with arms and legs folded up; beyond all doubt an aboriginal interment. The surface earth was carefully removed to within a few inches of the bones, and these were uncovered at a sufficient number of points to enable us to get the position of the skeleton, after which the whole was covered up again. As the skeleton lay in damp sand, packed down hard, there was in this process no risk of disturbing a single bone, and after the few points of exposure were covered again and the sand packed down upon them, the grave was still in its original condition, with the single exception, of course, of the condyle of the tibia, which had led to the discovery.

¹ *loc. cit.*, p. 296.

A deep trench was then dug entirely about the grave in the form of a quadrilateral, 4 ft. by 2.5 ft., enclosing the entire grave and leaving everywhere a margin of at least six inches beyond the probable position of the bones. A frame of stout planks was then built around the grave, and the whole boarded over for the night.

The next morning a floor was driven across, just beneath the lower edge of the frame, from one side to the other, using for this purpose boards with pointed ends, and digging away the earth from in front of each board as it was pushed in. Before beginning this, two long beams were laid lengthwise along the sides just below the frame, and the floor boards were so placed as to lie just above these, and rest across them. The entire structure, frame and floor, with the enclosed grave, thus came to rest upon the two beams, and when these were lifted by some six men, the whole was readily loaded upon an auto-truck.

In this form the aboriginal grave, weighing about six hundred to seven hundred pounds, was brought to the anthropological laboratory of Smith College, where the actual excavation took place at leisure, and under the most favorable conditions possible. The tools employed for the rougher work were wooden skewers, obtained at the market; also knives and scalpels could be employed when the act to be accomplished was definitely known, and where the bones were exactly located. The use of several sorts of brushes, especially the ordinary type of clothes brush, was of great assistance, and was fairly safe.

This work stretched over the available time of several days, and upon its completion the exposed surface was thoroughly impregnated with shellac, used very thin at first, followed by stronger and stronger solutions, which eventually bound everything in place, earth, bones and all. In order to search for artifacts the earth outside of the boundary of the bones was carefully removed, but was later replaced, mixed with cement, and formed a natural frame about the skeleton, which thus came to lie in a depression, as at first. The specimen has been placed in an oak case under plate glass, and is oriented as nearly as possible in the position relative to the points of the compass that it was when found.

While still lying in its crude box, but thoroughly excavated, the skeleton was photographed from directly above by means of an improvised staging, and the results are here given (fig. 56). To get the proper effect the photograph should be held horizontally with the eye of the observer directly above its center. The skeleton is lying upon its right side, with knees drawn up to the chest, and with the lower legs strongly flexed, and evidently resting on the hams when in the flesh. The arms are also flexed, with elbows touching the thighs; and the hands, placed closely together but not clasped, are close to the face.

In the original orientation the axis of the trunk, or of the entire body as a whole, lay north and south, with the head towards the south, while the face was turned directly towards the east, as in the case of the skeleton figured in my former article.¹ A comparison of the two cases shows a close similarity in the position, even to details.

If this may be taken as the customary position of the body in local aboriginal interments, in the case of males at least, and this seems extremely probable, some explanation should be advanced to account for it. The embryonic theory, that is, that the position of the *fetus in utero* is symbolic of the rebirth, although cited as probable in the previous paper of the senior author, has been rendered untenable through the searching criticism of Andrée.² The first mention of the folded body as the embryo was by Peter Kolbens in 1745 who used the comparison simply as a simile, without the slightest intention of suggesting any symbolism on the part of the Hottentots, of whom he spoke. This mention, wrongly interpreted as an explanation rather than as a figure of speech, started the theory, which seems to have nothing in folklore or primitive philosophy to confirm it, save the general belief in the earth as the All-Mother.

A careful study of this absolutely reliable specimen interment strongly suggests that the body when buried was securely tied up

¹ *Ibid.*, pl. xxiii, fig. 2.

² Andrée, Richard; "Ethnologische Betrachtungen über Hockerbestattung," *Archiv für Anthropologie* (N. F.), Bd. VI (1907), pp. 282-307.

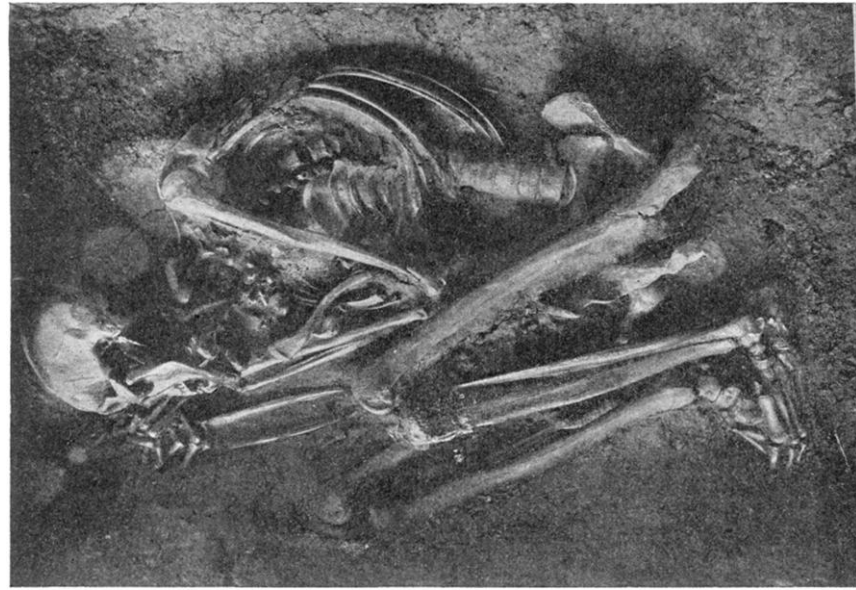


FIG. 56.—Aboriginal skeleton excavated at North Hadley, Mass., in November, 1915. The bones are exactly as found, as they have never been disturbed. Now in the Zoological Museum of Smith College. The photograph was taken from directly above the specimen, and should be held horizontally to put it into the proper position.



FIG. 57.—Aboriginal skeleton (Pocumtuck tribe), excavated at Greenfield, Mass., November, 1916. Condition and manner of photographing the same as in figure 56. Now in the Gilbert Indian Museum of Amherst College.

by what must have been heavy straps, probably of leather, as otherwise it would be hard to see how a dead body could be forced into such a position. Furthermore, while the most of the bones are either in their exact position or have been simply dropped through the natural decay of the body, the cervical vertebrae, and with them the clavicles and sternum, have been much dislocated, a condition perfectly explicable by assuming the presence of a tight strap, passed under the knees, and over the nape, forcing the head and neck down into a definite stoop. The gradual release of the joints of the body through decay, allowing the free parts to follow more the tension of the ligaments, while still confining the neck vertebrae, would produce exactly the result found in this case, and indicated with some definiteness in the photograph.

The fact that marked disarrangement of bones is shown mainly in this region is made especially significant from the study of other parts of the skeleton, where are shown only the definite results of the effect of decay and the influence of gravitation, and these clearly and vividly. Along the thorax, for example, when decay softened the ligaments which held the ribs to the vertebral column, this latter part rolled somewhat outward, parting from the heads of the ribs, which rested firmly in the earth, and had no tendency to move. This brought the vertebrae of this region up until the ventral aspect of the centers looks almost directly upwards, while the ribs of the upper side, the left ones, have dropped downwards in a bunch. The dropping down of the left knee, and the slight rolling over of the left foot, every phalanx of which has been preserved, are the natural results of gradual decay in place, while in contrast to these the strong dislocation of the vertebrae and other bones in the region presumably bound down by the thong is very striking.

There are two noticeable breaks, aside from that of the left tibia, previously spoken of, which need explanation, and these are (1) the fracture of the left femur near the proximal end, and (2) that of the left humerus, near the elbow. These are evidently comparatively late injuries, and are easily accounted for by the facts that this skeleton lay directly in the driveway which formed

the only convenient means of reaching the field with a wagon, and over which several generations of Hadley farmers have passed up and down with their loaded carts, and that the burial, as is customary, was superficial, the highest parts being not more than twelve to fifteen inches below the surface. In fact, on the day of the find we drove a heavy auto directly over the skeleton, as it afterwards proved, no less than three times, which may well account for a fresh extension of the fracture of the thigh, noticeable when the place was thoroughly uncovered and made clean.

Thus, from the impossibility of putting a dead body into such a position without confining the limbs in some way; and from the testimony of the disassociated neck vertebrae, while elsewhere the normal dropping down of the parts from unhampered decay is plainly seen, it seems safe to conclude that this body was tied up, and that very tightly, when buried. A strong band was evidently passed beneath the knees and over the neck, and probably also the hands were tied at the wrists and the feet at the ankles.

We may get corroboration of this theory, that the corpse was tied up tightly before burial, as well as a very reasonable suggestion as to the purpose, from the paper of Richard Andrée¹ who makes an exhaustive review of the custom of "Hockerbestattung" in all countries, and among peoples of every age, so far as known. He sets aside the embryonal theory, previously touched upon, as too fantastic and improbable to be considered; he treats similarly the idea of this position as that assumed by primitive man in sitting or lying; and he finds little evidence that the folding up is due merely to the desire to get the body in as small a hole as possible, and thus save work for the grave-diggers. He refers to the almost universal idea of the return of the dead to alarm or torment the living, and to the extraordinary means often resorted to to prevent this, and finds here the true explanation of the bound corpse. This suggestion appears to have been first expressed by Schoetensack in the case of the Australians,² to which Andrée adds numerous other cases from all parts of the world, and at various periods of time.

¹ *Archiv für Anthropologie*, Bd. vi (1907), pp. 282-307.

² *Verhandlungen der Berliner Gesellschaft für Anthropologie* (1901), p. 522.

Thus Strabo reports of the Troglodytes that they bound the neck of the corpse to the legs with withes of thorn, while remains of cords are still to be found in Egyptian graves of the Stone Age. In the island of Ceram, and also in Greenland the people are so anxious to tie up the corpse that they are led to begin operations before death. The same idea, that of not returning to haunt the living, appears in the funeral ritual of many peoples, both with and without the actual binding, and usually takes the form of direct appeal to the body not to come back.

Among some tribes more violent methods than simply tying are resorted to in order to prevent the return; and we find such customs as the smashing of the vertebral column with a heavy stone, as is done in Damaraland, or the burial at the crossroads with a stake of holly through the heart, as has been actually done in recent times in Europe.

In the article of Andrée here referred to is found a rich collection of burial customs in connection with the folding up of bodies for interment; and in all, at least wherever there is any special care used in the position of the body, there runs the thought of so fettering the body in the grave as to prevent a return. This fear may be founded on the idea that the body may avenge its death upon the living; that he may take back with him someone of the family still alive; or perhaps in certain cases, that a demon may get possession of the body and thus be enabled to do grave mischief, of a sort that, in his usual disembodied state, he would be powerless to effect.

The next occasion for obtaining local aboriginal skeletons came to the authors a year after the previous excavation, when, on November 22, 1916, some workmen on the street railway in Greenfield, putting in a spur track beside the power house at the locality known as Cheapside (fig. 58), dug through no less than three aboriginal skeletons, placed in almost an exact row, some twenty to thirty feet apart. But few traces of bones were left when we visited the spot, but there was the usual story about their being "in a sitting position," and one of the workmen went so far as to place himself in the exact position of one of the skeletons as he had observed it.

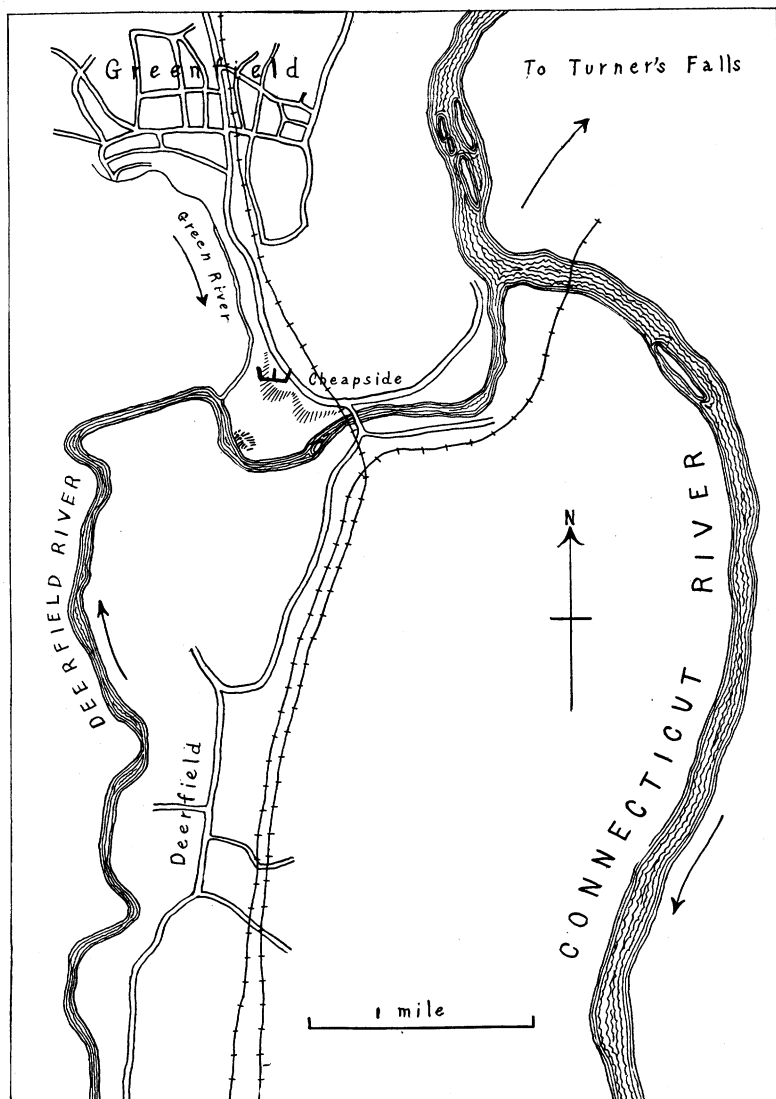


FIG. 58.—Sketch map, showing the locality where the second of the skeletons described in this paper was found. The first occurred at the site given in this periodical, vol. 5, p. 296.

Such could not, however, have been the case, since the entire excavation, from the surface to the level at which the workmen stopped, was but twenty-eight inches, while the mark of one skull was still visible in the frozen soil, the top ten inches below the surface. The stratum which included the entire skeleton could not therefore have been more than eighteen inches thick, quite insufficient to have included a sitting skeleton in the upright position claimed. Moved by this inexorable logic the workman next claimed that the leg bones were still in the earth below the previous excavation, but not only did further careful digging fail to reveal any bones, but did show undisturbed soil, while pieces of both femur and tibia were discovered among the debris left from the first digging. This refutation of the popular claim universally heard locally, that the Indians buried their dead in a sitting position, is extremely important, since, in the two cases of 1905, and the two recorded here, such was certainly not the case. They were sitting, in the sense that they were folded up, with the legs flexed, but were then placed on the right side, and were better described as lying, with the limbs drawn together. In the extremely careful description of Indian burials at Deerfield, the local historian, George Sheldon, describes all the graves the excavation of which he personally witnessed. The skeletons were lying in the flexed position, as in all of our cases, but in all instances cited from the testimony of others, the offending phrase is constantly used. It seems probable from the descriptions that in one or two instances of pretentious interments, where there was a rude stone cist for the reception of the body, the skeletons were really found sitting erect, with the skull on top, but until such a grave is excavated by an experienced archaeologist, and recorded by the aid of photographs, or, better yet, by the permanent preservation of the entire interment, some doubt may be allowed even here. Naturally our failure in finding sitting skeletons in this region does not disprove their presence here, and has nothing to do with interments elsewhere, but thus far, in four cases carefully excavated by ourselves, and in the case of some half-dozen others found by workmen, the skeletons were not sitting, but lying folded up, a position that

could be easily mistaken for a sitting one if the grave were carelessly exhumed.

The place where these Greenfield skeletons were dug up was an ideal site for an Indian cemetery. The entrance of the Green river into the beginning of a U-shaped bend of the Deerfield encloses on three sides a piece of meadow several acres in extent. Along the fourth side runs a slight elevation in the form of a ridge, lying across the meadow, and forming the fourth side of the enclosure. This ridge is rather indefinitely divided into knolls, the westernmost being oval, and semi-distinct, measuring some 30 X 50 feet in diameter. This is the spot where all the skeletons have been found, as it is the only place where any digging has been done about here and of this perhaps two-thirds has already been leveled, resulting in the discovery of about a half-dozen graves. The remainder of the ridge, and a bit of raised ground at the other end of the meadow, almost on the river bank, seem likely spots for further excavation.

So far as can be ascertained there is no tradition connecting Indian activity with this particular knoll, but it lies in the center of activity of the once powerful Pocumtuck, who were the overlords of all the river tribes, Squakheag, Nonotuck, Agawam, etc., between Brattleboro and Hartford, and who in the middle of the seventeenth century, were rated by Gookin at about the same number as the Narragansett. The Dutch in 1652 classed them among the "Great Indians." During the earliest part of the period of English settlement they were at war more than once with Uncas, that questionable protégé of the English, and were in temporary alliance with the Narragansett, and Niantic, to aid them against their Indian foes. In 1664, after treacherously murdering two ambassadors from the Mohawk, who had come to make with them a league of lasting peace, they were attacked by the entire manhood of the offended Mohawk nation and literally wiped out. After this the Pocumtuck disappear from history, but a few wandering individuals of the tribe appear in the English records, generally in those of the court. One old woman, Mashalisk, who owned land on the east side of the river, and who probably owed her preservation to this location, appears as a seller of these lands in payment

for the debts of her son, contracted at Pynchon's trading store in Springfield.

This definite date for the destruction of the Pocumtuck tribe allows us to date the use of this knoll as a cemetery as prior to 1664, and, from the fragile condition of the bones, far more so than in the case of the North Hadley site, it may well be one or more centuries before this time.

The fact of the number of skeletons discovered in removing a part of this knoll showed the strong probability that others are still present in the remaining part, and it is in this connection that we record with great pleasure the great courtesy with which our desire to dig here was met by the superintendent of the street railroad, Mr. John A. Taggart, who not only gave us full permission to excavate as we wished, but on various occasions sent men to assist in certain parts of the work which required aid, especially giving the services of the carpenter of the company, a man of great ingenuity and resourcefulness, who accomplished the boxing up of the grave in a most expeditious manner.¹

Beginning the excavations by trenches mainly parallel to the excavated edge, we located a skeleton on the second day of work, finding first the upper end of a left femur, and then the associated tibia and fibula. Ascertaining the general position of this leg, we next located the skull, and the left humerus, after which, as in the other case, we surrounded the entire grave with a trench. As an improvement in the technique may be mentioned the fact that the frame that was to serve as the sides of the box was first made apart from the site, and strongly reinforced, then brought to the spot and pushed down to place, and that then the bottom boards were driven through from one side to the other by repeated gentle

¹ While this article was in press we have had occasion to conduct further excavations at this site, and have found three more skeletons. These were in the same position as the one described, and in all are seen the two differences from the position at North Hadley; (1) the legs not so much flexed, and with the femora extended out at nearly a right angle from the body axis, and (2) the erect position of the vertebral column. They were also oriented as the other, with the body axis north and south, and heads to the south, and when located on a plot with the position of the others, so far as could be learned, were seen to run in definite rows placed north and south, the bodies placed lengthwise in the rows, and not across them, as in our cemeteries.

strokes of a heavy sledge hammer. This succession of light jars, contrary to what might be expected, caused less breaking or cracking of the earth than did the steady push of the crowbar used in the first case. Two planks were then placed beneath the whole, across the boards forming the bottom, and the whole was lifted to the surface by eight men. Here it may be said that it is of first importance to have the entire skeleton re-covered by earth, packed down firmly, before the work of boxing or lifting is attempted, and it is equally important to have all the lifting done by a sufficient number of men trained for this sort of thing to avoid any possibility of shock caused by slipping or jerking.

As in the other case, the transportation to the laboratory was accomplished by means of an auto truck, and the subsequent excavation was performed in a similar manner. Here, however, the problem was a more difficult one, as the bones were much less well preserved, and even the strokes of a clothes brush brought away the surface in the form of fine flakes and removed the inner tissues. It was also much less complete, as the bones of the hands and of one foot were entirely gone, leaving no trace even, while of the other foot, the right, there remained only the calcaneum and talus. Here there was no question of lack of care in the excavation, for the work was continued slowly through several weeks, allowing the whole to dry out thoroughly so that much of the earth was removed by blowing. This phenomenon, frequently noticed in old skeletons, is the more remarkable since the distal ends of radius and tibia, adjacent to the hand and foot, are distinct and practically entire; while there immediately ensues nothing but the sand. The skeleton is also entirely gone through the middle of the trunk, the first few thoracic vertebrae being in place and well preserved, while they leave off suddenly, together with their ribs, not to be resumed until the last of the lumbar series is reached, when the bones again appear in place and practically entire. The presence of two isolated ribs located under the left femur, suggests a solution of this serious loss, and gives a picture of some burrowing animal pushing downwards and forwards relative to the skeleton, dislocating the two ribs as found, and either taking out the missing

parts, or so opening up the soil that they soon disappeared through decay. The activity of a carnivorous animal, like a fox, while the body was still fresh is possible, but the space between the leg bones, in the present state at any rate, is hardly sufficient to allow so large an animal to pass far enough to deposit the ribs.

Finally, as to the position of the body, important similarities and important differences are shown in comparison with the other subject of this paper. The general position and orientation, folded limbs, body placed on the right side, and face towards the east, is the same in both, but the parts are not bound so tightly together. The back is straight, without the pulling down of the head and neck so conspicuously seen in the other specimen. The legs and arms, too, are not pulled up as close to the body; the legs are spread somewhat apart, and the left knee is not dropped down to touch the other leg. One hand only, the right, was held before the face; the other lay on the knee of its own side.

In hardening the bones and surface earth in this specimen a new fixing substance was suggested by the junior author, and used here with excellent results, namely, a thin solution of water glass. This formed an especially good coating over the soft and fragmentary surfaces presented by the bones, holding the parts in place, even when almost pulverized, as on the side of the skull. The subject was an old man, with senile jaw and a single tooth, visible in the photograph (fig. 57). It has every appearance of having antedated the one from North Hadley, by a great many years, as both were in similar soil, well drained.

In the above account we have been careful to give the details of our procedures, thinking that they may prove useful to others in other excavations. Since our own experience has been to find better and better ways of doing things with each venture, many improvements of our methods will suggest themselves to anyone who tries an excavation of skeletons *in toto*. Some application of sheet iron or similar thin material for running beneath the grave and forming the bottom of the box will undoubtedly be developed; also materials better than either shellac or water glass may be found for hardening the whole mass, and converting it into

a thin slab more easily handled than a box of dirt. This latter is especially to be desired since present methods do not allow any examination of the soil immediately beneath the body, one of the likely places for associated artifacts.

SMITH COLLEGE,
NORTHAMPTON, MASS.